WE CLAIM:

1. A disk drive comprising:

(a) a disk;

(b) a head;

(c) a voice coil motor (VCM) for actuating the head radially over the disk, the VCM comprising a voice coil;

(d) a plurality of driver switches for controlling a voltage applied to the voice coil; and

(e) a pulse width modulated (PWM) signal generator for generating PWM control signals applied to the driver switches, the PWM control signals comprising:

a PWM cycle time;

a Tforward time interval of the PWM cycle time wherein a positive control voltage is applied to the voice coil;

a Treverse time interval of the PWM cycle time wherein a negative control voltage is applied to the voice coil; and

a Tdead time interval of the PWM cycle time wherein a substantially zero control voltage is applied to the voice coil, wherein the Tdead time interval is adjusted to control a magnitude of an actual ripple current flowing through the voice coil.

2. The disk drive as recited in claim 1, wherein a first and second end of the voice coil are shorted to ground during the Tdead time interval.

3. The disk drive as recited in claim 1, wherein the Tforward time interval is computed in response to a target ripple current flowing through the voice coil.

4. The disk drive as recited in claim 3, wherein the Treverse time interval is computed in response to the Tforward time interval and the target ripple current.

5. The disk drive as recited in claim 4, wherein the Tdead time interval is computed in response to the Tforward and Treverse time intervals.

6. The disk drive as recited in claim 5, wherein the Tforward and Treverse time intervals are adjusted proportionally in response to a current command.

7. The disk drive as recited in claim 1, wherein the Tdead time interval is computed in response to a target ripple current and a measured ripple current.

8. The disk drive as recited in claim 7, wherein the measured ripple current is computed by:
(a) detecting the current flowing through the voice coil to generate a detected current;
(b) integrating the detected current over a first time interval of the PWM cycle time to generate a negative current measurement;
(c) integrating the detected current over a second time interval of the PWM cycle time to generate a positive current measurement; and
(d) computing a difference between the negative current measurement and the positive current measurement.

9. The disk drive as recited in claim 8, wherein the Tforward and Treverse time intervals are computed in response to the Tdead time interval.

10. The disk drive as recited in claim 9, wherein the Tforward and Treverse time intervals are adjusted proportionally in response to a current command.

11. The disk drive as recited in claim 1, wherein:
(a) the voice coil comprises a resistance R and an effective inductance L;
(b) the effective inductance L is a function of the actual ripple current flowing through the voice coil;
(c) the resistance R changes with temperature drift; and
(d) the Tdead time is adjusted to maintain a substantially constant ratio L/R.

12. A method of controlling ripple current in a voice coil motor (VCM) of a disk drive when driven in a PWM mode, the disk drive comprising a disk, a head, and the VCM for actuating the head radially over the disk, wherein the VCM comprise a voice coil, the method comprises the steps of:

(a) computing a Tforward time interval of a PWM cycle time;

(b) applying a positive control voltage to the voice coil during the Tforward time interval;

(c) computing a Treverse time interval of the PWM cycle time;

(d) applying a negative control voltage to the voice coil during the Treverse time interval;

(e) computing a Tdead time interval of the PWM cycle time;

(f) applying a substantially zero control voltage to the voice coil during the Tdead time interval; and

(g) adjusting the Tdead time interval to control a magnitude of an actual ripple current flowing through the voice coil.

13. The method as recited in claim 12, further comprising the step of shorting a first and second end of the voice coil to ground during the Tdead time interval.

14. The method as recited in claim 12, wherein the Tforward time interval is computed in response to a target ripple current flowing through the voice coil.

15. The method as recited in claim 14, wherein the Treverse time interval is computed in response to the Tforward time interval and the target ripple current.

16. The method as recited in claim 15, wherein the Tdead time interval is computed in response to the Tforward and Treverse time intervals.

17. The method as recited in claim 16, further comprising the step of adjusting proportionally the Tforward and Treverse time intervals in response to a current command.

18. The method as recited in claim 12, wherein the Tdead time interval is computed in response to a target ripple current and a measured ripple current.

19. The method as recited in claim 18, wherein the measured ripple current is computed by:

(e) detecting the current flowing through the voice coil to generate a detected current;

(f) integrating the detected current over a first time interval of the PWM cycle time to generate a negative current measurement;

(g) integrating the detected current over a second time interval of the PWM cycle time to generate a positive current measurement; and

(h) computing a difference between the negative current measurement and the positive current measurement.

20. The method as recited in claim 19, wherein the Tforward and Treverse time intervals are computed in response to the Tdead time interval.

21. The method as recited in claim 20, further comprising the step of adjusting proportionally the Tforward and Treverse time intervals in response to a current command.

22. The method as recited in claim 12, wherein:

(a) the voice coil comprises a resistance R and an effective inductance L;

(b) the effective inductance L is a function of the actual ripple current flowing through the voice coil;

(c) the resistance R changes with temperature drift; and

(d) the Tdead time is adjusted to maintain a substantially constant ratio L/R.